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ARBORETUM BULLETIN

Published by the Arboretum Foundation

Winter 1985, Vol. 48, No. 4

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Concerning This Issue . . .

Although Christmas is past, the holly collection at the Arboretum is still at its peak. Join the very knowledgeable Virginia Morell for "A Visit to the Arboretum's Holly Collection".

Spring begins early in the Pacific Northwest, actually, according to Jan Pirzio-Biroli it starts when the first *Prunus subhirtella* blossoms open in November. Jan's article "The Fragrant Flowering Shrubs and Trees of Winter" is an olfactory delight which describes the many odiforous plants than can be found in the Arboretum during this rather dreary season.

Dr. Gessel from the department of Forestry at the University relates his experiences with growing *Eucalyptus* in the Pacific Northwest — this article should inspire the intrepid amongst us to plant some of these beautiful trees.

Three other articles in this issue include a nomenclature update by Brian Mulligan, a look at how the University's Landscape Department uses the Arboretum, and an introduction to the new librarians at the Miller Library at the Center for Urban Horticulture.

For those who are still struggling with Jim Clark's "How Well Do You Know the Arbroetum" quiz the deadline has been extended to April 19th, which happens to coincide with the dedication of the new Visitor Center.

It's time to put down the seed catalogues, grab your rubber boots and this issue of the *Bulletin,* and go to the Arboretum where holly berries and winter fragrances await you.

Nancy Pascoe

The ARBORETUM BULLETIN is published quarterly, as a bonus of membership, by the Arboretum Foundation, a non-profit organization to further the development of the Washington Park Arboretum. Information regarding membership in the Foundation may be obtained by writing to the Arboretum Foundation, University of Washington XD-10, Seattle, WA 98195 or by calling (206) 325-4510. Articles on botany and horticulturally-related subjects written by professional and amateur botanists, horticulturists, educators and gardeners are welcomed. No part of the BULLETIN may be reprinted without the authority of the Arboretum Foundation. Typesetting by Carl Lejon Associates, lithography by Heath Printers.
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Arboretum Bulletin

WINTER 1985, VOLUME 48, NUMBER 4

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COVER
Camellia sasanqua. From
Flora Japonica Plantae, by
Dr. Ph. Fr. de Siebold. Courtesy of the
Rare Book Room, Miller Library

A Visit to the Arboretum's Holly Collection

VIRGINIA L. MORELL

Virginia Morell is President of the Holly Society of America.

To the average reader "holly" conjures up a picture of a shiny-leafed plant with bright red berries which is very useful at the Christmas season for decorations. However, this particular holly is only one of nearly five hundred species of the genus *Ilex,* family *Aquifoliaceae.* There are hollies indigenous to every continent except Australia. In North America between twenty and twenty-five species exist, all of which are found east of the Mississippi river. Those shiny, prickly-leaved hollies one finds in the woods of the Pacific Northwest are the result of a bird's gourmet meal of holly berries from someone's garden. South America has the largest number of native hollies with over 130 species. Asia follows next with between 120 and 125 species, and because of recent plant expeditions into China, still more are being discovered.

The leaves of evergreen holly are colorful year round and the berries provide additional color for many months. This versatile genus produces spiny leaves and leaves that resemble those of box, willow, or camellia. *Ilex* leaves can be tiny, coin-shaped and arranged in whorls, or six to eight inches long and serrated. The leaves may be solid green or have a margin or central blotch of silver or gold. Some hollies have red berries, while the fruits of others may be shades of yellow, black, orange, or white.

Holly has been known and used for centuries. The Romans sent it to friends as a token of esteem during their Saturnalian festival in December. The Druids thought the evergreen leaves proved that the sun never left the earth. Many legends have come from Christianity, one of which is that the crown of thorns that Christ wore during the crucifixion was made of holly.

The Washington Park Arboretum is fortunate in having one of the most extensive holly collections on the West Coast. Brian Mulligan, the Director Emeritus of the Arboretum, made the first plantings in the

The Holly Collection at Washington Park Arboretum. *photo: Joy Spurr*

spring of 1949 near the south end of Arboretum Drive. That March some 29 species and varieties totaling 113 plants were set out. These were arranged in sections; one for English holly *(Ilex aquifolium),* one for its hybrids, one for Asiatic hollies, one for deciduous species and one for native American species. By 1966 there were 135 hollies in the collection. At present count there are 474. This is one of the collections being considered for renovation in the Arboretum. The deep shade created by the native big-leafed maples has caused many of the hollies to become leggy and spindly, and the cutback in funding has prevented the proper maintenance and weed-control. However, with time and adequate supervision the collection can re-establish its former reputation as the best on the West Coast, and indeed the entire country.

As you enter the collection from the south you see two large trees of *Ilex* x 'San Jose'. These are handsome large-leaved plants with clusters of fat red berries. To the left of these trees is the collection of deciduous hollies; *Ilex decidua, I. verticillata, I. laevigata* and *I. serrata.* These hollies have an abundance of bright red berries up and down the stems, which delights the birds.

West of the deciduous hollies is an *Ilex pedunculosa* from Japan, a most interesting hardy tree with smooth leaves, and fruits like small cherries which hang down on 1-to 1½-inch long pedicels. Around the rest of the bed are the forms of *I. crenata,* the popular Japanese holly. You will find *I. crenata* 'Convexa', *I.c.* 'Microphylla', *I.c.* 'Helleri', *I.c.* 'Mariesii' and a number of others. *I. sugeroki* with small red berries on longish, upright pedicels is also here and *I. dipyrena* is nearby.

North of this planting is a bed of large-leaved hollies, called *altaclarensis* types. These are a putative cross from the Canary Islands of *Ilex perado* and *I. aquifolium.* These handsome plants are among the most popular in England. Included in this planting are *I. aquifolium* 'Camelliifolia', *I.a.* 'Wilsonii, and *I.a.* 'Eldridge'.

Across from these large hollies are some of the Asiatics. *Ilex pernyi* is an interesting one from China which has angular branches with leaves and berries sitting tight on its branches.

Ilex altaclarensis *'Balearica'.* *photo: Joy Spurr*

Ilex opaca xanthocarpa *'Canary' with its yellow fruit.* *photo: Joy Spurr*

The *I. aquipernyi* hybrids, *I. pernyi* and *I. aquifolium* are particularly handsome, as is *I. pernyi* 'Veitchii'. *I. cornuta,* the horned holly from China, is also here. Others of interest are *I. latifolia* from Japan, which is the largest-leaved holly and reaches 60 or more feet in its native habitat. The lovely, compact *I. ciliospinosa,* with its smallish, dark green leaves is planted here as well.

Opposite this planting are the many English hollies, *I. aquifolium.* These include those with silver variegations in the center of the leaf *('Medio-Picta').* In a nearby island in the road are *I.a.* 'Ferox', the hedgehog holly, with spines on the surface of the leaf, and *I. integra,* from Japan, with its spineless leaves.

A large planting of *Ilex opaca,* the dull green-leaved native American holly most resembling *I. aquifolium,* is south of the above-mentioned hollies. Included in the 26 specimens in this planting is *I.o.* 'Canary', a lovely yellow-berried one.

Newer introductions, planted by Joe Witt, the late curator of the Arboretum, are found to the south of the deciduous collection. These have not yet reached a size to be eye-catching. New hollies are being introduced frequently by the United States Arboretum, Rutgers University and other plant-breeding programs throughout this country and abroad. A new intriguing one, to be introduced this year by the Holly Society of America, was developed at Rutgers University and is named 'Rock Garden'. This interspecific hybrid was test-grown for ten years and achieved a maximum height of eight inches. If the new hollies can be acquired and added to the present collection, the Arboretum should become a very definitive source of information on the West Coast for those people who are interested in holly.

Ilex pernyi.

Ilex pendunculosa.
drawings: Micheal Moshier

Sorbus "Prattii Hybrid": An Update

BRIAN O. MULLIGAN

The fruiting *Sorbus* illustrated on page 28 of the 50th anniversary issue of the *Arboretum Bulletin,* (Fall 1985), is not a hybrid of *S. prattii* as there captioned. Plant nomenclature is continually being revised and updated and since the taking of the photograph that *Sorbus* has been named *S. forrestii* by Dr. H.A. McAllister and Mr. C.M. Gillham of the University of Liverpool Botanic Gardens in Cheshire, England, (published in Curtis's *Botanical Magazine,* vol. 183, part 1, t. 792, 1980). The species *Sorbus forrestii* is very distinct and different from what was presumed to be a *S. prattii* hybrid.

The Arboretum plants were raised from seeds received in April 1945 from the Royal Botanic Garden, Edinburgh, as *Sorbus prattii.* The first plant was set out in a bed of *Rhododendron (Azalea) kaempferi* near the Winter Garden in October 1949. This plant is still there, though too much overshadowed by large native trees surrounding it; it is now about 18 feet tall. Another went to the area between Miller and Roanoke Streets, north of Lake Washington Boulevard, in March 1950, but died a year later. One was then propagated by grafting, probably on *S. aucuparia* stock, and placed in the main *Sorbus* collection, which is south of the nursery and east of Arboretum Drive East. This specimen has thrived in an open situation and has become a dense, round-headed tree about 16 feet tall. The white fruits remain on the leafless branches until late in November or into December; the birds do not seem as attracted to the white-fruited species of *Sorbus* as they are to those with red or orange fruits. The late J.A. Witt noted on the record card that the original tree was probably a hybrid, since its foliage characters did not agree with those of *S. prattii;* each leaf having only 7-8 pairs of leaflets instead of 10-14, and these distinctly larger in size. Other differences also became apparent later, in the pubescence (or lack of it) of the winter buds and shoots, and the leafy stipules of our plant.

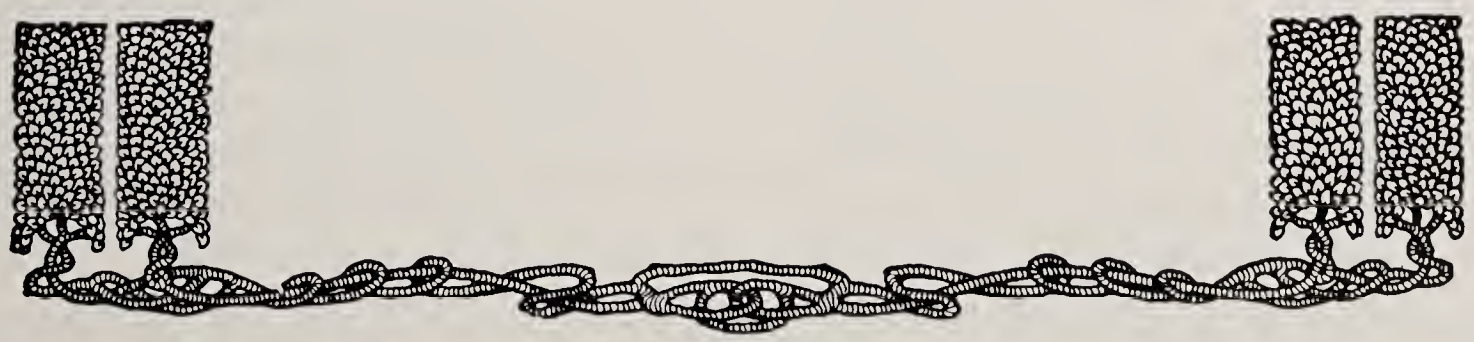
Four seedlings from the parent tree were planted along the east boundary fence in the *Sorbus* area in February 1965 and two more in the area north of the Winter Garden a year later. When these plants became large enough to flower and bear fruits it became evident that all were identical in their characters of growth habit, shoots, flowers and fruits — clearly indicating that this tree was breeding true to type from seeds and was therefore

Sorbus forrestii. *photo: B.O. Mulligan*

Fruits of Sorbus forrestii. *photo: B.O. Mulligan*

probably an apomictic species and not a hybrid. Apomictic plants produce viable seeds without fertilization of the embryo cell, although pollination is necessary to ensure seed production. Other examples are to be found in some species of *Cotoneaster, Crataegus* and of *Malus.* This is a useful characteristic for nurserymen concerned in raising large numbers of such plants and should be utilized more frequently than it now is.

In 1980 Dr. McAllister and Mr. Gillham published the new species *Sorbus forrestii,* as already noted, but we did not immediately recognize that this was our *S. prattii* hybrid, until dried specimens were sent to Dr. McAllister in September of 1982 and he confirmed the identification two years later. (Unfortunately the photograph which appeared in the fall issue of the *Arboretum Bulletin* was not relabelled.) The original confusion in the name arose in 1933 from a misidentification of the Edinburgh plant as *Sorbus prattii.* The plant should have been recognized as a new species since it had been raised from seed collected by George Forrest in 1921, in northwest Yunnan, China. As far as the Arboretum is concerned it is good to have had this problem straightened out by an authority; we can now hope that some enterprising nurserymen will undertake the rather simple task of raising plants of this and some other apomictic species of *Sorbus* in the collection such as *S. hupehensis* and *S. cashmiriana* to provide plants for west coast gardens. They will all be assets, particularly for their extended fruiting seasons.



The Arboretum and the University:
The Department of Landscape Architecture

IAIN ROBERTSON

Iain Robertson is an assistant professor in the Department of Landscape Architecture at the University. He was Project Manager for the landscape design around the Center for Urban Horticulture with the architectural and landscape architectural firm of Jones and Jones. In 1986 he will join the Center's staff to assist completing the development of its landscape.

Several times during any University term you may come across small groups of people winding their way slowly and intently through the Arboretum. Sometimes a group may be seen examining the flowers, leaves, twigs and bark, or the form and habit, of a particular shrub or tree. At other times the same group may step back to observe the 'big picture' — the character of plant masses, the form and mood of spaces surrounded by shrubs or under the canopy of trees. At times such as these, the group may spend five or ten minutes discussing the design and composition of plants in a particular part of the Arboretum. Such a group is a class from the Department of Landscape Architecture using the Arboretum.

The Landscape Department looks at the Arboretum from two perspectives simultaneously; the first is to observe the diversity of plants, learn more about individual species and notice seasonal differences, etc. The other perspective is to look at the broader picture which involves the interaction of plants with each other and with people. Thus, in one respect, we see the Arboretum as a 'living botanical laboratory' in which we may study the plants themselves, while in another respect we see it as an important botanical 'design laboratory' in which we can discover the design potentials of plants and the character of spaces that can be created with them. It would not be difficult to find other places that serve one of these functions separately; nurseries, parks, the University campus and indeed most residential streets in Seattle would suffice, but the Arboretum is unique in that it can serve both functions simultaneously. It is an important collection from which we may continue to learn more about plants year after year, and yet it is also a place where we may learn more about designing with individual plants, plant groups or large masses. It is a place where we may study the composition of plants and learn to create the sorts of spaces, and evoke the sorts of emotions, that make life worthwhile. Thus, the Arboretum is a significant educational resource for the Landscape Department as a collection of plants and as a designed landscape in which the plants create spaces with a variety of sizes, forms, characters and moods.

Douglas Research Conservatory

With a bequest of $1,000,000 from the late Neva Douglas, the Center for Urban Horticulture will soon begin building the Douglas Research Conservatory on its campus at Union Bay. The conservatory, now in design by Jones and Jones, will include a greenhouse, headhouse, laboratory, classroom, and other support facilities. The gift honors Neva Douglas's parents, J.F. and Neva B. Douglas; J.F. Douglas was the original developer and manager of the University of Washington's Metropolitan Tract, now the heart of Seattle's financial district.

The conservatory "will play a vital role in all our programs here at the Center, says Director Harold B. Tukey, Jr. It will allow the study of plant development in a variety of controlled environments and will also be used for plant propagation and "hands-on" teaching. "We are tremendously pleased and grateful," says Tukey, "that the Douglas family has chosen horticultural research and education as the beneficiary of Neva Douglas's bequest." Ms. Douglas's brother, James B. Douglas, and his son, James C. Douglas, executor of the estate, were responsible for directing the gift to the Center.

Deletions from *Woody Plants in the Washington Park Arboretum*

The following plants have died for various reasons and are no longer in the collections at the Arboretum. Persons owning copies of the catalog *Woody Plants in the Washington Park Arboretum,* published May, 1977, should delete them from that list.

Abies concolor 'Husky Pup'
Acer multiserratum
Arctostaphylos uva-ursi 'Purple Leaf'
Berberis manipurana
B. mucrifolia
Betula pendula 'Purple Splendor'
Calocedrus decurrens 'Intricata'
Clematis macropetala
Elaeagnus pungens 'Fruitland'
Fraxinus excelsior 'Aurea Pendula'
Glyptostobus pensilis (G. lineatus)
Hypericum oblongifolium
Ilex crenata var. *mutchagara*
I. glaba 'Ivory Queen'
I. hybrid 'Oriole'
Juniperus scopulorum 'McCoy Creeper'
J. scopulorum 'Repens'
Philesia magellanica
Picea omorika 'Nana'
Rosa cinnamomea
R. sericea (L.&S. 15726)
R. 'The Garland'
Rubus deliciosus
Teucrium fruticans
Tilia insularis

BRIAN O. MULLIGAN

Prunus Mume. *From the book* Flora Japonica Plantae, *by Dr. Ph. Fr. de Siebold. Courtesy of the Rare Book Room, Miller Library.*

The Fragrant Flowering Shrubs and Trees of Winter

JAN PIRZIO-BIROLI

As a result of severe cold weather early in the season this year, most of the trees and shrubs mentioned in this article may be blooming later than usual.

If one associates spring with the first flush of bloom in the garden, then in our Pacific Northwest "spring" begins when the autumn-flowering cherry *(Prunus subhirtella* 'Autumnalis') opens its first buds in November. This "spring" continues throughout winter into late March when the cherry is joined by, seemingly, everything coming into bloom at once. If we use the scientific definition of winter, as that period between the winter solstice and the vernal equinox, eliminate the herbaceous plants and ignore those woody harbingers of spring if they bear no fragrance, then we are left with an interesting assemblage of shrubs and perhaps one tree, which bear fragrant flowers.

After five years as naturalist at the Washington Park Arboretum, I have come to believe that fragrance in the garden, especially in winter, is a sometime thing. It can be most frustrating to lead a group of twenty persons up to a special plant, having promised a tantalizing scent, only to find that the plant yields no fragrance whatever. It is equally frustrating to read in the extensive literature on scented gardens that *Jasminum nudiflorum* and *Daphne laureola* are fragrant when I have never been able to detect any kind of scent in either of them. That superb plantsman, Brian O. Mulligan, agrees with me that the jasmine is devoid of fragrance, but he supports the authors who state that the fragrance of *Daphne laureola* is quite evident in the evening.

Perception of fragrance is highly subjective. Not only do descriptions disagree from person to person, but a plant may be fragrant to one and malodorous or odorless to another. Roy Genders, author of *Scented Flora of the World*[1], has several paragraphs

[1]St. Martin's Press, New York, 1977, pp. 46-47.

Hamamelis mollis *in bloom.* *photo: B.O. Mulligan*

on the subject of individual responses to odors and fragrances. There has also been an interesting study by Adrian Forsyth that deals with the difference in odor perception between men and women.[2]

Why do flowers have scent, and why is scent apparent sometimes and not always? Scientific research has proven that floral odors — sweet or foul — are an evolved means of attracting pollinating insects; i.e., they "learn" to recognize flowers, at least partially, by scent. This phenomenon has been studied by many pollination biologists, including our own Professor Bastiaan J.D. Meeuse.[3] Winter-blooming plants are frequently notable for their fragrance. This is understandable if one considers that winter-blooming flowers are fairly abundant for the few insects that are hardy enough to be abroad, such as bumblebees (which prefer minty odors), moths and butterflies. Therefore, it is advantageous for a plant to "advertise" its flowers in any possible way in order to compete. Color is, of course, one means of attracting attention, but scent can travel farther and is, as a result, an additional, highly efficient mechanism for attaining pollination.

The question of when is scent apparent in a flower is often dependent upon the hour and the weather. A plant whose flowers are only fragrant at a certain time of day is probably adapted to pollination by a specific insect or other animal which is active at that time. Evening fragrances are well-known for this; for example, certain kinds

[2]*Natural History* 94 (11), Nov. 1985, pp. 24-32.

[3]Among the flowering plants that Dr. Meeuse finds extraordinarily interesting are the foul-smelling members of the *Arum* family, which have evolved intricate mechanisms to attract insects such as flies.

of moths fly only at night. There may also be a requirement by plants for warmth or light in order to activate the chemicals that give fragrance, such as a plant that may be fragrant only when the sun strikes its flowers. Furthermore, I have often found that on wet, or even cloudy days, I have been unable to find fragrance in a plant that was well-known for this characteristic, yet after bringing a twig or blossom of it into a warm room, it emits its own distinctive aroma.

The Arboretum and gardens of the Pacific Northwest have an abundance of fragrant, winter-flowering plants. Many of these shrubs and trees are concentrated in or near the present Winter Garden. Additional species and cultivars may be found elsewhere on the grounds.

The following is a list of plants that we can grow in our area which bloom within the given time frame and produce fragrant flowers:

Azara microphylla. This dainty Chilean shrub, whose slender branches are clothed with small, glossy, evergreen leaves, produces clusters of stamens in the leaf axils in such volume that the undersides of the branches have a sheen of gold, and the fragrance of vanilla perfumes the air.

Camellia sasanqua. These graceful, evergreen shrubs, with willowy branches lend themselves to espaliering. They produce quantities of single or semi-double flowers whose buds open in succession. The name *sasanqua* is here used to cover that autumn-blooming species, as well as certain other cultivars of *C. hiemalis* and *C. vernalis* that traditionally have been known as sasanquas. The latter two species bloom later than the true *C. sasanqua,* well into winter, frequently with scented flowers that vary from one cultivar to another.

Chimonanthus praecox and its cultivar 'Luteus'. The intricate flowers of these deciduous shrubs are semi-transparent, the sepals of which are cream-colored in *C. praecox,* or yellow in *C.p.* 'Luteus'. The petals of these flowers are purplish. Early blooming (January) and exceedingly fragrant, wintersweet is said to be reminiscent

Flowers of Corylopsis pauciflora.
photo: B.O. Mulligan

of jonquil or violet. The shrub itself has little character when it is not in bloom so it is best to blend it into a shrub border.

Clematis armandii. This evergreen vine bears large, hanging panicles of one-inch, lightly scented flowers in mid-March to April.

Corylopsis species. The drooping, lemon-yellow racemes of these deciduous shrubs bloom in mid-season. The intricately branched *C. pauciflora* is said to have a fragrance of almonds, while the taller *C. spicata* has a less distinctive scent. Bean describes this as "cowslip-like", i.e. of *Primula veris.*

Daphne species. This genus is renowned for the heavy perfume of most of its species. The most fragrant of all is *D. odora,* whose cultivar 'Marginata' is most frequently grown in our area. A single branch containing only one inflorescence of the white-inside, purple-outside, tubular flowers can perfume an entire room. The Arboretum grows a white form, *D. odora* 'Alba'. The February daphne *(D. mezereum)* clothes its naked stems with sweet-smelling mauve or white flowers in mid-winter. The typical purple form produces red fruits, while the white ('Alba') has orange berries; their seeds breed true to color. *Daphne blagayana* blooms at the end of a warm February and is sweetly fragrant. As stated above, I have

Azara microphylla. *photo: courtesy of the Washington Park Arboretum*

yet to experience the scent of *D. laureola.* A note of caution: while the fruits of daphne apparently are enjoyed by birds, (which spread them around the garden generously), they are poisonous to human beings.

Hamamelis species and hybrids. Most kinds of witch hazel bear their clusters of flowers with strap-shaped petals on bare branches. The best known is *H. mollis,* which is also one of the most fragrant. Its flowers are so cold-resistant that they can retain their substance and color even on snow-laden branches. The varieties of *H. japonica* vary in their perfumes, and their hybrids with *H. mollis* are equally variable. Perhaps it is stretching a point in an article on winter fragrance to single out the hybrid 'Winter Beauty', for this clone usually begins to bloom in November; however, the long-lasting, rust-colored flowers give an overwhelming fragrance that carries from the Arboretum's Winter Garden to Arboretum Drive. Another scented species is *H. vernalis* which occasionally is used as understock for the other types, although it has many qualities to recommend it in its own right.

Lonicera fragrantissima and **L. standishii.** These very similar deciduous shrubs grow in the Arboretum beside the path just north of the Winter Garden. They have small white flowers that seem to offer no promise until one steps up to them to take a whiff. But on sunny days, that whiff is sufficient, particularly of *L. standishii.*

Mahonia species and an Arboretum hybrid. Mid-winter is blessed by two fragrant species of *Mahonia (Berberis)* and a hybrid between them, *M.* x 'Arthur Menzies'. *Mahonia bealei,* the hardier of the two parents, blooms with short, erect racemes of pale yellow flowers, while the more striking *M. lomariifolia* has four-to-eight-inch spikes of brilliant gold. Unfortunately, the latter species is only marginally hardy in our area. Therefore, it is a fond hope of the Arboretum staff to introduce into the nursery trade their hardy hybrid 'Arthur Menzies' whose leaves are intermediate between the

two parents, but which bears flowers equally as handsome as those of the tender *M. lomariifolia.* The Arboretum also grows *M. japonica,* which differs from *M. bealei* in that its inflorescence is lax. It is not in the nursery trade here and has not performed well in the Winter Garden.

Osmanthus species. The genus *Osmanthus* is a group of shrubs with leathery, evergreen leaves of varying shapes and sizes. Their tubular, white flowers are produced in succession from autumn through spring, dependent upon the species. *Osmanthus suavis,* which blooms in March, is not as well-known in the Pacific Northwest as it deserves to be. The more commonly used species, *O. delavayi* and O. x *burkwoodii* bloom later in the season and rarely within our time-frame.

Prunus mume. The single tree that is known to bear fragrant flowers in winter is *P. mume,* the Japanese flowering apricot, which has long been treasured in Japan for its early bloom on bare branches. Several cultivars have been introduced, ranging in color from pale pink to crimson, and from single- to double-flowered forms. Since the clones vary in their degree of fragrance, it might be well to purchase them in bloom. The Arboretum has the type species and one cultivar, 'Dawn', both located in or near the Japanese Garden. Other winter-blooming species of *Prunus,* such as the cultivars of *P. subhirtella,* are scented.

Sarcococca species. Four species of sweet box grow in numerous shady areas of the Arboretum, where they perfume the air throughout winter; their somewhat insignificant white flowers hang beneath the branches. Three of them are represented in the Winter Garden. These are neat, attractive evergreen shrubs with numerous landscape uses. They may be distinguished superficially as follows: *Sarcococca humilis* has narrow leaves, and, as the name implies, is the lowest-growing species at about one foot in height. Somewhat similar in foliage, but less glossy, is the taller *S. hookeriana* var. *digyna. Sarcococca ruscifolia* and *S. confusa* might easily be confused with each

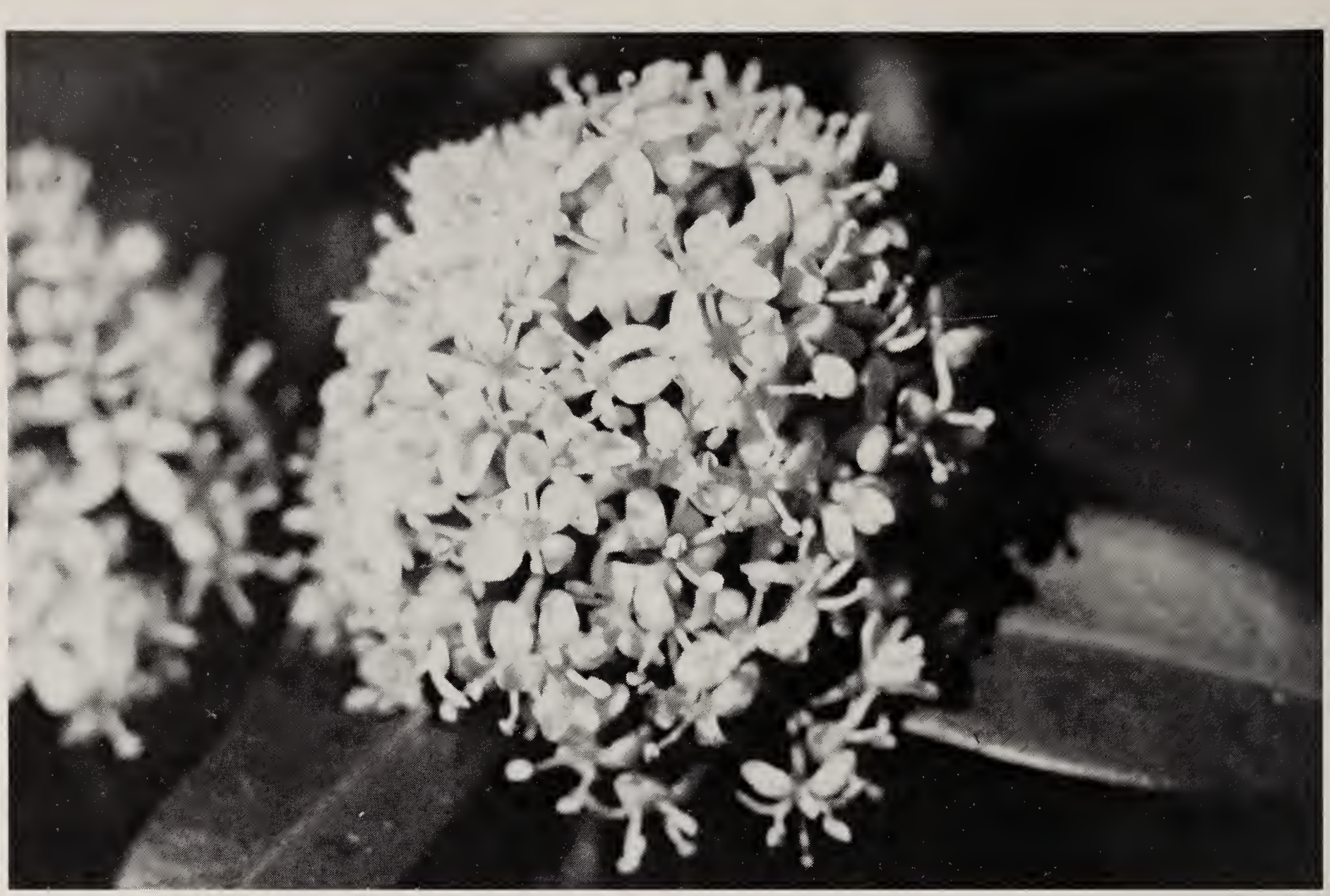
Daphne blagayana. *photo: B.O. Mulligan*

other except when in fruit. Both have polished, ovate leaves with acuminate leaf tips, quite different from the preceding species; *S. ruscifolia* is the only member of the quartet with red fruits, while those of the others are blue-black to black.

Skimmia japonica and **S. reevesiana.** Better known of the two species is the dioecious *S. japonica,* which bears fragrant panicles of small, off-white flowers that open in winter after the red or white fruits have formed. These fruits apparently are distasteful to birds since they remain on the branches for almost a year, even while the new crop is forming. Although I find no mention of it in the literature, it is my impression, and again Mr. Mulligan agrees with me, that the staminate (male) plants are the more highly scented. In my own garden, there is a lone male plant which becomes overwhelmingly sweet-smelling when it is struck by the sun's rays in mid-day. *Skimmia reevesiana* is less well-known than *S. japonica,* although it has the advantage of being self-fertile with equally fragrant flowers.

Stachyurus praecox. This little-known, winter-blooming shrub produces its pendant racemes of delicate, lemon-yellow flowers in late winter. They are described as being vanilla-scented.[4] This is a large vase-shaped

[4]I have not been able to detect any scent from our plant in the Arboretum. B.O.M.



Skimmia japonica. *photo: courtesy of the Washington Park Arboretum*

shrub with elegant, dogwood-like leaves and needs room to spread out at the back of a border.

Viburnum species and hybrids. An extremely variable genus, *Viburnum* contains several species which bloom on bare branches during warm periods of winter with clusters of fragrant, tubular pink or white flowers. A number of them perfume the Winter Garden and spill over into the Woodland Garden to the south. They are *V. farreri* (formerly *V. fragrans), V. farreri* 'Candissimum', *V. grandiflorum, V.* x *bodnantense* (a hybrid between the preceding species) and its cultivar 'Dawn', and *V. foetens,* whose white flowers belie the name (it is the leaves which have a foetid odor when crushed).

In private gardens, a desirable placement for such treasures of winter is near a pathway or entrance where their fragrance is more likely to be noticed frequently. Thus, in my garden, *Daphne odora* 'Marginata' and *D. mezereum* 'Alba', *Osmanthus delavayi, Sarcococca confusa, Clematis armandii, Azara microphylla* and the aforementioned male plant of *Skimmia japonica,* all grow between the carport and the front door. Crowded? Not really, because the path is long and there is room for many other plants that give pleasure throughout the year.

Rosemary Verey[5] suggests that if there is space, a part of the garden near the house be set aside for winter display. Her suggestions include not only winter-flowering scented trees and shrubs, but also plants with colorful bark and foliage, the early bulbs, as well as plants with scented foliage such as evergreen herbs (e.g., rosemary and lavender) or low-clipped *Eucalyptus.* Thus she suggests that floral fragrance is only one aspect of the garden that can give pleasure in winter.

[5] *The Scented Garden.* Van Nostrand Reinhold Company, New York, 1981, pp. 142-143.

New Horticultural Librarians

Valerie Easton and Laura Lipton are job-sharing the new position of Horticultural Librarian at the Miller Library. They were selected from more than 40 candidates who applied from around the country. Both librarians have a Master's degree from the University of Washington Graduate School of Library and Information Science.

Ms. Easton comes to the Center for Urban Horticulture with a public services background and a strong interest in plants. For the last seven years she worked as a reference librarian at Bellevue Public Library. Prior to that she set up a library and provided reference and research services for NBBJ, a firm of architects and planners. She took the Washington State University Master Gardener training last winter and has been in the process of landscaping her own yard for the past two years.

Ms. Lipton, also an avid gardener, has a second Master's degree in Education. She set up and managed the library at the Pacific Science Center where she served as Librarian and Grants Coordinator from 1978 to 1982. In addition, she has seven years experience in public and university libraries and two years of experience with a computerized information firm. Ms. Lipton enjoys spinning, weaving and natural dyeing, and volunteers for many arts organizations.

Their dream is to make the Miller Library one of the best horticultural libraries in the country. Although it is a small library, they plan to develop it as an excellent resource center for the faculty and students of the Center as well as for the gardening public and related professional groups in this region.

The Library collection currently has about 2,000 books and 2,000 journals, (some of which are in exchange for the *Arboretum Bulletin),* is expected to eventually triple in size. About 500 rare books, all donated in previous years, have been moved from storage in Suzzallo library to the Center's climate-controlled Rare Book Room, so that they will be accessible once again.

The Library is currently open to the public for browsing Monday through Friday from 9 a.m. to 5 p.m. Evening and weekend hours will be announced soon. Once cataloging and processing are completed, some books will be available for checking out.

Both librarians expect to do public speaking and displays for garden clubs and Center classes, as well as short book reviews for the *Arboretum Bulletin.* Volunteers are needed to work with rare books, seed catalogs and the library's computer.

Many of the books in the Library were donations or bought with donated funds. A gift/donation policy statement and a "wish list" of much-needed books is available at the library.

EUC. GUNNII.

EXPLANATION OF PLATE.

A. Juvenile leaves. B. Broader juvenile leaves. C. Twig bearing buds, flowers, and adult leaves. D. Buds with longer pedicels. E. Anther, front and back view. F. Seed-cups and adult leaf.

Eucalyptus gunnii *from the book* Trees From Other Lands, in New Zealand, Eucalypts *by J.H. Simonds, courtesy of the Rare Book Room, Miller Library*

Attempts to Grow Eucalyptus in the Pacific Northwest

S.P. GESSEL

Dr. Gessel is a Professor Emeritus at the College Forest Resources at the University of Washington, where he has taught since 1948. He specializes in forest soils and growth. He has been associated with the Arboretum for many years.

Introduction

Growing eucalypts in the Seattle area is not a new idea and my attempts have been erratic and without much planning. Therefore, what I have to report should be viewed as the comments of a dappler and not of a plant explorer.

I became interested in *Eucalyptus* as a very diversified genus of trees when the late Dr. Max Jacobs of Australia gave a series of Walker-Ames lectures at the College of Forest Resources in 1970. A good part of his lecture series dealt with the role of *Eucalyptus* in world forestry and the success of *Eucalyptus* plantings around the world.

The interest was fed by a continuous series of graduate students from Australia at the College. It was further developed by my own travels to Australia beginning in 1969-'70 and continuing up to the present. These trips allowed me to view firsthand the large number of different species of *Eucalyptus* in Australia and the adaptation they seem to have for certain climate and soil environments. I was also able to make personal contact with the CSIRO Seed Laboratory[1] at Canberra and arrange for specific seed sources to be sent to me. Additionally, as a result of extensive travels throughout most forest habitats in Australia, I was able to make personal seed collections of what appeared to be very cold hardy selections and arrange these to be sent to me in Seattle. Thus I have tested quite a number of species of *Eucalyptus* and these are listed in the next section.

[1]Commonwealth Science and Industrial Research Organization

Species I Have Tested

The following lists consist of the different species, separated by years in which the seed was received and tested:

1976 source: CSIRO
Eucalyptus dives
E. johnstonii
E. coccifera
E. nitida

1979 source: CSIRO
Eucalyptus dalrympleana
E. viminalis
E. delegatensis
E. johnstonii
E. coccifera
E. pauciflora ssp. *niphophila*
E. stellulata

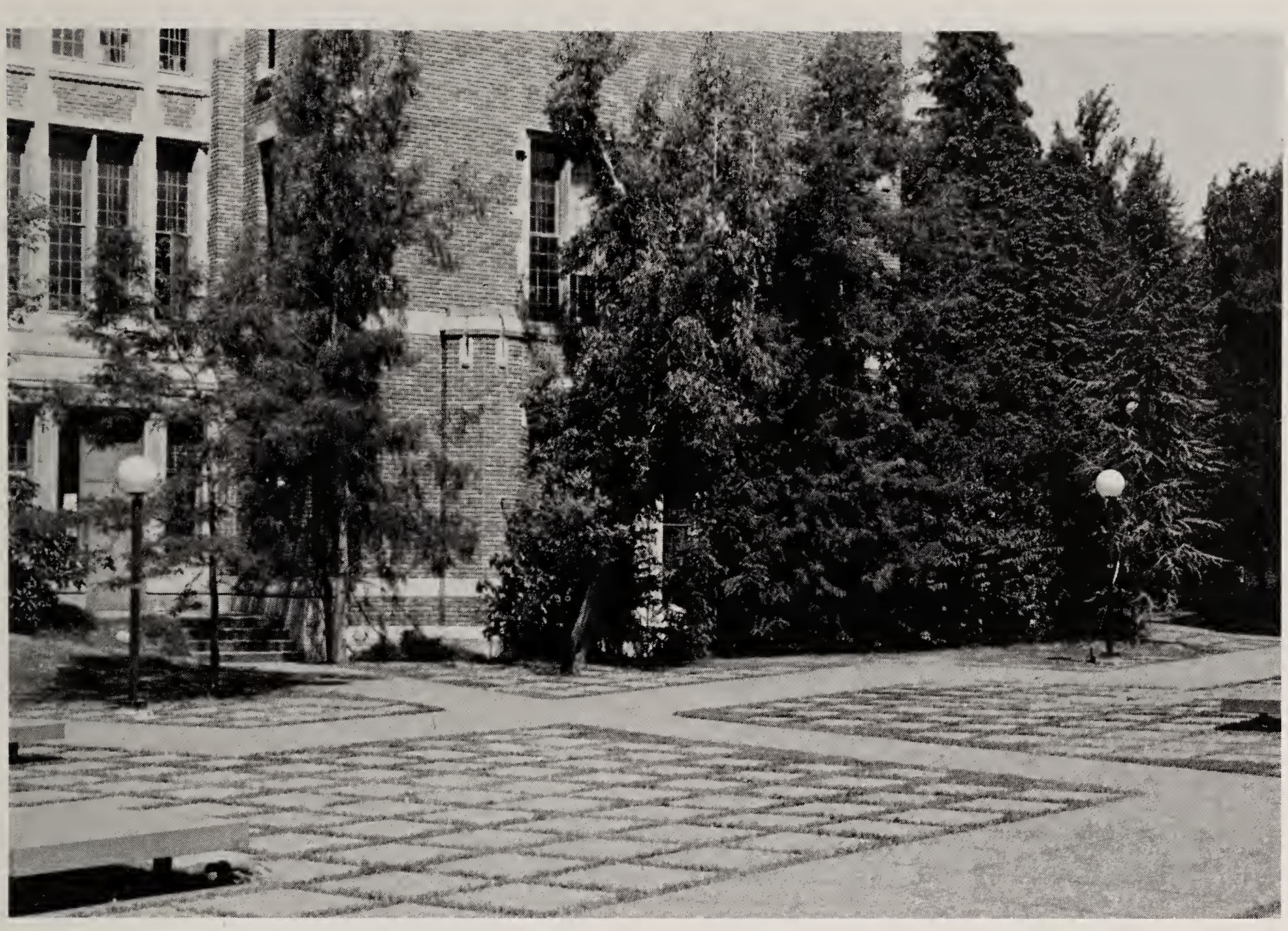
1981 source: CSIRO
Eucalyptus gunnii
E. glaucescens
E. delegatensis
E. nitens
E. coccifera
E. urnigera
E. viminalis
E. dalrympleana
E. pauciflora subs. *pauciflora*
E. camphora
E. stellulata
E. cinerea
Personal Collection:
Eucalyptus pauciflora (high altitude)
Eucalyptus macarthuri

1983 source: CSIRO
(These are under test by Crown Zellerbach.)
Eucalyptus viminalis
E. nitens
E. gunnii
E. bicostata
E. urnigera
E. dalrympleana
E. delegatensis
E. glaucescens
E. stellulata
E. fraxinoides
E. fastigata
Personal Collection:
E. pauciflora (good form)
E. coccifera
E. nitens
E. ovata
E. stellulata
E. nova-anglica

1984-85 source: CSIRO
(Germinated in spring of 1985, now in seedling stage.)
Eucalyptus urnigera
E. pulverulenta
E. cinerea
E. alpina
E. delegatensis
Personal Collection:
E. urnigera
E. cinerea
E. alpina
E. pulverulenta
E. obliqua
E. neglecta

I normally germinate seeds in sand flats at the Botany greenhouse, University of Washington. When I judge seedlings to be large enough, they are transplanted to individual pots and grown in the greenhouse until the following spring. At this time seedlings are outplanted by myself, either at my home or on areas adjacent to the Forestry buildings. Excess seedlings have been given to interested friends or taken to our Pack Forest for outplanting. I have given some of the 1983-84 introductions to Dr. William Atkinson, Forest Research Director for Crown Zellerbach Corporation for testing in Oregon. Crown Zellerbach is in the process of making tests of *Eucalyptus* for wood production. I have also sent some of the seed to Mr. Lee Hunt of the Fir Springs Tree Farm, Winston, Oregon who also is making extensive tests of *Eucalyptus*. Professor Warren Etcheson of Business Administration, University of Washington, is interested in *Eucalyptus* and has tested some of my plant collections. I include results from both of these individuals. Even with this assistance from friends and landowners, what I report does have restrictions relative to wide scale interpretation based on:

1. My own time. I was frequently away after outplanting and therefore could never follow development of the plants



Eucalyptus *planting at the Department of Forestry buildings, University of Washington.*
photo: B.O. Mulligan

systematically. As a result, many died from lack of early care or identification was lost.

2. Areas to plant. My most successful plantings have been in my own yard as might be expected, but space is a severe limitation. Many of the trees planted around the Forestry buildings have been lost because of lack of water or grass-mowing activities.

3. Accurate reports on success or reasons for failure. In many cases, because of my absence from Seattle, I was unable to determine the cause of loss.

Special Problems

The major problems associated with successful introduction of *Eucalyptus* into the Seattle area in my experience are:

1. Cold hardiness.
2. Root and top relationship of the tree.
3. Competition from other plants and people.

Cold hardiness is the most important factor in successful growth of *Eucalyptus* in this area, as this eventually becomes the controlling factor. Eucalypts have been introduced into many of the colder areas of the world, mainly for ornamental use but sometimes for wood production and these reports agree with the importance of cold hardiness. I have viewed my introductions as ornamental but there is now considerable interest in the genus for wood in California and Oregon. The hardiness of some species of *Eucalyptus* is being investigated in many countries, and the subject matter was thoroughly reviewed at a meeting of the International Union of Forestry Research organization, in France in 1984. I have copies of several reports on the hardiness of *Eucalyptus* in Great Britain and also from the CSIRO in Australia. These all substantiate my own observations about the importance of cold as a limiting factor. Many instances are reported where growth rates of *Eucalyptus* were very good and introductions appear to be successful, only to be devastated by one severe low temperature period. Although the Seattle climate is viewed as one of the more amenable to a wide variety of plants than any in the world, we are subject

Flowering branches of Eucalyptus perriniana.
photo: B.O. Mulligan

to rather extreme cold periods as evidenced by the November 1955 freeze and the more recent December and January cold periods of 1983-'84 and 1984-'85. We also experienced below-normal cold in 1972, 1973, and in January 1974.

All of the species I have selected for introduction to Seattle come from environments in Australia where they experience varying degrees of below freezing temperatures. Some as *Eucalyptus stellulata* or *E. ovata* are found typically in frost hollow locations in Australia. Others grow at higher altitudes and may be subjected to severe cold at any time of year.

These species have done very well in Seattle and some, such as *Eucalyptus nitens* have grown 20 feet in height in two years. Others such as *E. delegatensis* and *E. macarthuri* have produced sustained growth over a period of several years and survive the normal range of low winter temperatures. However, disaster occurs when an arctic cold front settles in the Seattle area for several days with continuous below freezing temperatures, bright sunlight and strong wind. Most of the eucalypts do not seem to be able to withstand these conditions without some damage. The damage may be anywhere from foliar or bud damage to total kill. Some species will die above ground, but sprout back from the base or ligno tubers. Damage can be quite variable within a species as reported later. The severity also appears to be related to the hardening off process, with greater damage sustained in cold periods which follow warm autumns.

The root and top relationship is a problem because of the heavy crown foliage development of *Eucalyptus* in this area and absence of leaf-eating insects to reduce the leaf area. Most Australians who have viewed some of the vigorous trees on the campus comment that they look quite different than the same species in their native habitat because of the full foliage totally untouched by insects. This abundant foliage, coupled with soil density problems, result in unstable trees. Many of the soils I have planted *Eucalyptus* on have hardpan layers, and this, plus perhaps cold soil temperatures, restricts root development to surface layers. The trees are very susceptable to our high winds during winter wet periods and many have been lost to wind throw. I have had to stake or tie most of the trees I have planted at some point in their life and the larger trees have been tied to permanent structures on the campus.

Because of the locations of my plantings, human interference has also been a major factor. Identification tags seem to be quickly removed and many seedlings have been pulled up. I have had better overall success with material planted in my own yard. Excessive grass and weed competition has also caused losses on plantings I have not tended properly in the first year.

Results

My report of success is on the basis of specimens which have survived the planting mishaps and which have withstood the major freezes in the Seattle area. In my period of testing, the major freezes have been in 1974-'75, Christmas 1983, and this past winter of 1984-'85.

Some of my first plantings of 1971-'75 period resulted in large trees up to 70 feet tall in the Forestry building compound at the University; species included *Eucalyptus delegatensis, E. viminalis, E. gunnii, E. pauciflora* and *E. johnstonii.* The same species survived and grew very well in my home plantings. *Eucalyptus viminalis,*

although a very rapid grower, proved to be the most sensitive to severe cold periods and large trees up to 30 feet in height have been killed. *Eucalyptus nitens,* another very rapid grower, was also killed, along with *E. johnstonii* and *E. macarthuri. Eucalyptus delegatensis* proved to be the best of the more rapid-growing species both at home and at the University; a number of very nice specimens of this species developed at both places. However, the extreme extended cold period of Christmas 1983 killed those specimens of *E. delegatensis* at my home in the Northgate area, and some at the University, but not all. Two sizable trees survived both the 1983 and the 1984 cold periods. The same experience has developed with *E. gunnii;* some individuals were killed or severly damaged while others were not. This seems to be a characteristic which could prove of considerable value in breeding for cold tolerance in *Eucalyptus.*

The most cold hardy eucalypts I have found in the Seattle environment developed from the seed of *Eucalyptus pauciflora* that I collected myself on the upper slopes of Mt. Kosciusko in New South Wales. These were in an area with snow cover for a good part of the year and with freezing temperatures likely to occur anytime. Seedlings started from this collection and outplanted in early 1983 survived the cold periods of 1983 and 1984 essentially undamaged; the specimens at my home are now about five feet tall and growing well. They tend to be more shrublike, instead of having a single stem axis, but they are of good ornamental form.

Acting on the information developed over these years of testing I looked for specific cold hardy species during my 1983-'84 stay in Australia. I collected seed wherever possible because I was traveling to many of the higher altitude and cold pocket areas in Australia. I also spent some time at the CSIRO seed laboratory selecting seed sources and species I thought would be most useful. Some of these species have been planted out and withstood the 1984 cold period with little obvious damage.

One good selection is *E. pauciflora* but of a lower elevation source and of a more dominant tree form. In fact, the plants from this

Eucalyptus *at Forestry buildings in 1978.*
photo: B.O. Mulligan

source resemble strains of *E. delegatensis* in growth form. The other is *E. coccifera* collected from near the top of Mt. Wellington at Hobart, Tasmania. *Eucalyptus urnigera* has also survived well and is growing nicely. These all escaped any major damage during the 1984 cold period. Some plants of *E. johnstonii* also survived the 1983 and 1984 frosts.

Professor Etcheson reports that he has tested *Eucalyptus saligna, E. microtheca, E. robusta, E. gunnii* and *E. camaldulensis.* Of these, *E. gunnii* is the only one exposed to severe cold temperature under natural conditions. He outplanted specimens near Monroe, Washington at 1,500 feet altitude and at his home in Kirkland at 500 feet (where he included some plants of *E. niphophila).* All plants at the Monroe site were killed in the 1983 cold period. At his home, all plants have died from the combined cold periods of 1983 and 1984 except one *E. niphophila,* which is now about eight feet tall.

Mr. Lee Hunt reports on several years of testing *Eucalyptus* in central western Oregon. The 1983-'84 cold period was very damaging with sub-freezing temperatures for a week and lows near 8 °F. Damage was varied within a species, some individuals being killed and others surviving. *E. delegatensis, E. nitens* and *E. dalrympleana* suffered this variable

damage, while *E. johnstonii* was killed. *Eucalyptus gunnii, E. glaucescens* and *E. urnigera* had only minor damage. He is continuing his work on screening *Eucalyptus* for hardiness and feels that the variable damage within a species opens the possibility of more interspecific selections for cold hardiness.

Conclusion

The net results of all of my efforts to grow *Eucalyptus* in Seattle is that I have had many failures, some successes — so far — and have learned a lot about the growth habitats and requirements of *Eucalyptus* in the process. I know that many species will grow extremely well and will react to good soil fertility and weed control. There seems to be a general concept that because many *Eucalyptus* species are found on relatively poor soils in Australia they will grow well here without nutrients. This is definitely not the case and in my experience they are more reactive to better nutrition than our native vegetation.

However, the success of an introduction must be judged on the ability to survive what may be called normal, re-occuring cold periods. I add normal because I do not think the 1955 freeze should be used because much native vegetation was severely damaged or destroyed by this unusual event. Based on the above, I believe that there are species of *Eucalyptus,* and certainly strains, locally already growing within species, which have the adaptability to enrich the gardens of the Pacific Northwest. I think other *Eucalyptus* species can contribute to wood production on the West Coast beyond the present situation. My friend, Mr. Lee Hunt, and others are exploring this potential contribution of eucalypts in Southern Oregon and Northern California, where the severity of the arctic air masses is ameliorated. Mr. Hunt has well developed testing programs and his results will be of interest to anyone looking at *Eucalyptus* for wood production as well as ornamental planting in Oregon.

Pyracantha. *Woodblock from* Shrubs in the Garden and Their Legends *by Vernon Quinn, illustrations by Marie A. Lawson.*

Book Fair

The Arboretum Foundation will hold a used book fair on Friday, February 28th and Saturday, March 1st in the new Visitor Center at the Arboretum. Friday night will be a members-only event with refreshments from 5:00-8:00 p.m. The book fair will be open to the public on Saturday from 10:00 a.m.-4:00 p.m.

Used hardback and paperback books in all catagories will be available. A selection of new gardening books will also be offered.

Book donations and volunteers are welcomed and encouraged. Call the Arboretum office at 325-4510 for book drop-off locations.

All proceeds will benefit the new Visitor Center Building Fund.

Book Reviews

THE ADVENTUROUS GARDENER, By Christopher Lloyd. Random House. Color photos, paperback.

When I read one of Christopher Lloyd's books, I feel as though I were walking through a garden with him casually talking about each plant or an aspect of the garden. Christopher Lloyd's writing flows in a conversational tone with simplicity, clarity and vast common sense. His plant descriptions are explicit, pictorial and comfortable — concise without being terse. In speaking of roses, he says, "...our practices in the art of gardening will be greatly enriched when the rose is considered as a companion for other plants rather than as an isolate."

Throughout the book he dips into favorite passages from authors such as Gertrude Jekyll, Farrer and Robinson, making you want to read or reread passages in their books which you might have missed or forgotten.

Mr. Lloyd contends that there should be less written about time - and labor saving ground covers and more written about precious plants and how to make them happy. Gardening, he says, is endlessly fascinating and diverse," . . . numerous as the world's band of gardeners is, there should be more of us. Not just routine, but mad keen gardeners."

Deciding he no longer liked *Elaeagnus pungens* 'Maculata' (though it had been his favorite plant in previous years) he said, "it doesn't know how to grow; its angular branch system is like a forest of ingrowing toenails." My husband would have agreed with him, for he attacked ours regularly with loppers, saying it would grow back as soon as he turned his back.

Like the *Well Tempered Garden* (1970), which has proved popular in both the paper back and hardcover editions, this book will be enjoyed by both novice and expert gardeners. It enthusiastically portrays the joy of gardening and the use of simple, practical solutions to many problems.

I was delighted to find a description of *Lathraea clandestina* which I have coveted since seeing it at Sissinghurst. This hardy flowering parasite feeds on the roots of willows, maples and poplars. I feel vindicated in my desire to have one. Mr. Lloyd says, "I suppose naked-flower haters will be thor-

oughly disapproving of any parasite flower that might come their way, since these never have or need foliage. Parasites are all baddies by definition, unless you happen to be one yourself, in which case you become an entrepreneur."

The eight pages of stunning photographs by Pamla Toler are reproduced with great integrity and art. The high quality of the photographic reproduction seems to me most unusual for a paperback.

Including *The Adventurous Gardener,* Mr. Lloyd has written some eight books. If you are not yet acquainted with his writing, I urge you to delay no longer. This and others from his pen are great to enjoy over a mid-morning cup of tea (with an occasional chuckle), or as a ready reference on propagation and care of a newly acquired plant for your garden. *Horticulture* magazine has described Christopher Lloyd as "possibly the best garden writer today."

NAN BALLARD

Wetland Plants of the Pacific Northwest, Fred Weinmann et al., U.S. Army Corps of Engineers, Seattle District, 1984.

This 85 page booklet surveys 59 species of wetland plants native to the Pacific Northwest which occur in eelgrass beds, low salt/brackish marshes, high salt/brackish marshes, shallow freshwater marshes, wet meadows and swamps. The authors' objective was not to be all-inclusive, but rather to illustrate the broad range of wetland habitats and plants. After a brief discussion on habitats, a page with a color photograph is devoted to each plant describing its scientific and common names plus field characteristics. An index, glossary and bibliography add to the book's usefulness. Copies of the booklet are available free of charge while the limited supply lasts. Call Victor Yoshino at the Seattle District, Army Corps of Engineers, to request a copy: (206) 764-3424.

LAURA LIPTON

Winter Gardening in the Maritime Northwest: Cool Season Crops for the Year-Round Gardener, by Binda Colebrook. 2nd edition, Maritime Publications, 1984.

Ms. Colebrook's goal in this book is to turn her readers into year-round gardeners by providing them with the information needed to grow and harvest vegetables through the fall, winter and early spring. She tested her techniques in Whatcom County, where she helped to start Cloud Mountain Farm, a producer of organic garlic, apples and nursery stock adapted to the Northwest climate. The major principles of winter gardening, such as site selection, climate, soil and sowing dates are thoroughly discussed, as is dealing with "sharecroppers" (pests). Included are descriptions of vegetables and herbs suitable for cool season cropping, with their common and scientific names, nursery sources, information on hardiness, and often an illustration. Especially useful are the lists at the back of the book on seed companies, gardening books and organizations.

The House of Boughs: A Sourcebook of Garden Designs, Structures, and Suppliers, edited by Elizabeth Wilkinson and Marjorie Henderson. Viking, 1985.

This beautiful, large-format encyclopedia is designed to both inspire and instruct. It is organized alphabetically by topic, and presented chronologically. The text, the profuse illustrations and photographs are not concerned with plant materials, but with the architectural components of gardens throughout history: the fences, arbors, walls, fountains, pavings, buildings, etc. The section on fences, for example, includes information and illustrations on over a dozen types and styles. The listing for paths has drawings and photographs of European, Chinese and Japanese paths from ancient to modern times with information on their development, historical context, and construction. A lengthy list of suppliers and their addresses, a glossary and bibliography help in pursuing the ideas presented.

VALERIE EASTON

The Visitor Center Dedication

The long awaited Visitor Center in the Washington Park Arboretum will be dedicated on April 19, 1986! The new building is a gift to the city of Seattle from the Arboretum Foundation. The new facility will contain offices for the Foundation and the urban horticulture staff, as well as a large meeting hall, smaller conference rooms and a gift and reception center. A fund-drive is now in progress, for more details call 543-8800.

Fern Specimens for Hyde Herbarium

The Hyde Harbarium at the Center for Urban Horticulture has received a gift of 243 fern specimens, mounted and labeled, for inclusion in the collection. Most of the sheets were collected by Neill Hall of the NOHS Fern Study Group, which made the presentation to the Herbarium Committee on December 9. *The Fern Herbal,* an elegant book by Elfriede Abbe, accompanied the specimens. Herbarium curator Dr. Clement Hamilton and the volunteer Herbarium Committee expressed their gratitude both for the gift and for the encouragement it will provide for other plant study groups to help expand the resources of the herbarium.

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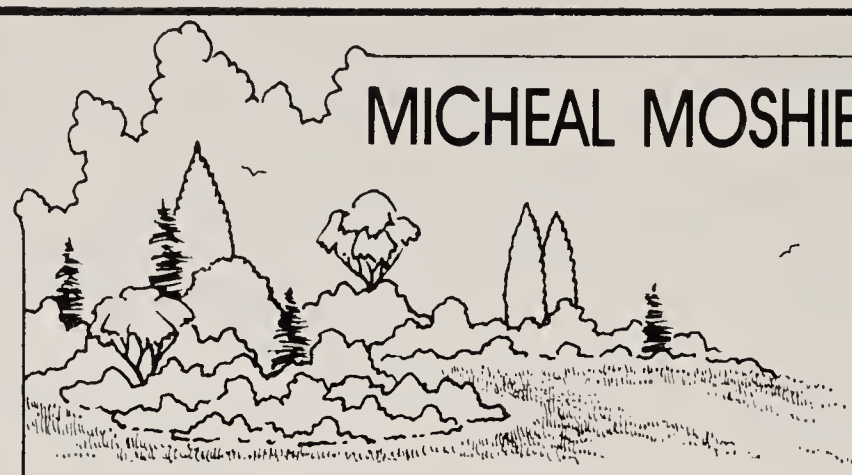

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OFFERING UNUSUAL
SELECTIONS FOR
DISCRIMINATING
COLLECTORS
OF PLANT MATERIALS

WELLS-MEDINA Nursery
8300 N.E. 24th St., Bellevue 454-1853

Arboretum Day at the Nurseries
Saturday, March 22, 1986

One dollar from every five dollars spent on plant material at the following nurseries will be donated to the Visitor Center's Building Fund. Shop March 22nd and support our new building!

Edmonds Garden Center
610 5th South
Edmonds

Five Corners Nurseries
15826 1st S.
Seattle

Lynn's Garden Center
2939 E. Madison
Seattle

Mizuki G. Nursery
and Garden Store
6033 Empire Way S.

Molbak's Greenhouse
and Nursery
13625 N.E. 75th
Woodinville

R. & R. Nursery
2004 132nd S.E.
Bellevue

Swanson's Nurseries
and Greenhouses
9701 15th N.E.
Seattle

Uyeda Nursery
and Landscaping
2829 164th S.W.
Lynnwood

Well's Medina Nursery
8300 N.E. 24th
Bellevue

Pacific N.W. Nurseries
11030 N.E. 64th
Bellevue

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Published by the
Arboretum Foundation
University of Washington Arboretum XD-10
Seattle, Washington 98195

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